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ASSIGNMENT BOOKLET 5A

MAT2225 Mathematics 24
Module 5: Section 1 Assignment

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Date Assignment Submitted: _____	(If label is missing or incorrect) Student File Number: _____
Time Spent on Assignment: _____	Module Number: _____

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Assignment Grading: _____

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Student's Questions and Comments

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5

MATHEMATICS 24

Module 5

Assignment Booklet 5A

Learning Technologies Branch

Alberta LEARNING

FOR TEACHER'S USE ONLY

Summary

	Total Possible Marks	Your Mark
Section 1 Assignment	50	
	50	

Teacher's Comments

Mathematics 24
Module 5: Statistics
Assignment Booklet 5A
Section 1 Assignment
Learning Technologies Branch
ISBN 0-7741-2608-6

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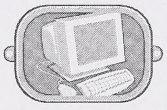
The Learning Technologies Branch acknowledges with appreciation the Alberta Distance Learning Centre and Pembina Hills Regional Division No. 7 for their review of this Assignment Booklet.

This document is intended for	
Students	✓
Teachers	✓
Administrators	
Home Instructors	
General Public	
Other	



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ASSIGNMENT BOOKLET 5A
MATHEMATICS 24: MODULE 5
SECTION 1 ASSIGNMENT

This Assignment Booklet is worth 50 marks out of the total 100 marks for the assignments in Module 5. The value of each assignment and each question is stated in the left margin.

Read all parts of your assignment carefully and record your answers in the appropriate places. If you have difficulty with an assignment, go back to your Student Module Booklet and review the appropriate lesson. Be sure to proofread your answers carefully before submitting your Assignment Booklet.

50

Section 1 Assignment: Conducting a Survey

Clearly show how you arrived at your answers by showing your work.

1. A survey of city drivers was conducted at a downtown parkade. Drivers of vehicles stopped at the entrance barrier were asked whether they would consider using the transit system if fares were reduced.

(1) **a.** Name the sampling technique used in this survey.

_____

(2) **b.** Identify the population and the sample.

_____

_____

(3) **c.** Is the sampling technique random or non-random? Explain.

_____

_____

_____

(3) **d.** Do you think the sample would be representative of the population? Defend your answer.

Turn to Section 1: Lesson 2 in the Module 5 Student Module Booklet.

2. Stella has been asked to collect information from teenagers in her community. She is to find their opinions about the sports program at the Friendship Centre. In her community there are 550 teenaged boys and 450 teenaged girls. Stella plans to sample 200 teens in her survey.

(5) **a.** If she wants a stratified sample, how many of her subjects should be teenaged girls?

(5) **b.** If Stella wants a self-selected sample, how could she collect the data?

Turn to Section 1: Lesson 3 in the Module 5 Student Module Booklet.

3. Stella decided to use a written questionnaire to collect the needed information. Following are three questions Stella wrote for the questionnaire.

1. Do you play basketball and soccer? Circle your response.

   yes no

2. There were a number of serious football injuries last season. Should tackle football be continued? Circle your response.

   yes no

3. On average, how many hours per week do you participate in the sports program at the Friendship Centre? Circle your response.

   A. 0–2 hours B. over 2 hours

(2) **a.** Are these questions closed or open? Explain your answer.

_____

_____

(6) **b.** When Stella reread these three questions, she realized they would introduce bias into her survey results. Explain the bias in each of her questions. Rewrite these questions to remove bias.

1. _____

   _____

   _____

2. _____

   _____

   _____

3. _____

   _____

   _____

(3) **4.** When Stella conducted her survey, she was uncertain of the reliability of her results. What might she do to test the reliability of her survey?

(2) **5.** Explain what the difference is between survey reliability and validity.

Turn to Section 1: Lesson 4 in the Module 5 Student Module Booklet.

6. Bill surveyed people entering a theatre and asked them if they would support a new hospital in their area.

(3) **a.** Discuss this method of collecting data in terms of its appropriateness.

(3) **b.** Bill chose to use an interview rather than a questionnaire. State three reasons why Bill might have made this decision.

7. Khana and Bernice are discussing why local telephone numbers are seven digits long.

Bernice thinks one reason is because seven digits is about the maximum number of digits people can easily remember. Khana thinks another reason is because seven digits provide enough different numbers in a district for everyone who has a telephone.

They decide to conduct an experiment to see if Bernice's conjecture is correct. They plan to use digits from this list in their experiment.

71409358443268087075436789008765454900754326777545432300998763 11

36800239094875690019098376466790481110093874778699699677675895 83

2210017746655498

(5) **a.** Design an experiment that Bernice and Khana could use. Describe it.

(5) **b.** Carry out your experiment and summarize your results.

(2) **c.** What did you discover?

_____

_____

_____

_____

Submit your completed Assignment Booklet 5A to your teacher to be marked.

Turn to Section 1: Conclusion in the Module 5 Student Module Booklet.

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ASSIGNMENT BOOKLET 5B

MAT2225 Mathematics 24
Module 5: Section 2 Assignment and Final Module Assignment

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Time Spent on Assignment: _____	Module Number: _____

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Assigned Teacher: _____

Assignment Grading: _____

Graded by: _____

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Student's Questions and Comments

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Teacher's Comments

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MATHEMATICS 24

Module 5
Assignment Booklet 5B

Learning Technologies Branch

Alberta LEARNING

FOR TEACHER'S USE ONLY

Summary

	Total Possible Marks	Your Mark
Section 2 Assignment	30	
Final Module Assignment	20	
	50	

Teacher's Comments

Mathematics 24
Module 5: Statistics
Assignment Booklet 5B
Section 2 Assignment and Final Module Assignment
Learning Technologies Branch
ISBN 0-7741-2609-4

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ASSIGNMENT BOOKLET 5B
MATHEMATICS 24: MODULE 5
SECTION 2 ASSIGNMENT AND FINAL MODULE ASSIGNMENT

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30

Section 2 Assignment: Presenting Data

Clearly show how you arrived at your answers by showing your work.

1. Turn to page 294 in your textbook and use the data from the Canadian Tobacco Use Monitoring Survey to answer this question.

(8) **a.** Use a spreadsheet program to draw a bar graph of the data. Title your graph Smoking Rates Among 15–19 Year Olds. Attach a copy of your graph in the space below.

(2) **b.** Which provinces are below the Canadian average of 22.5%?

_____

_____

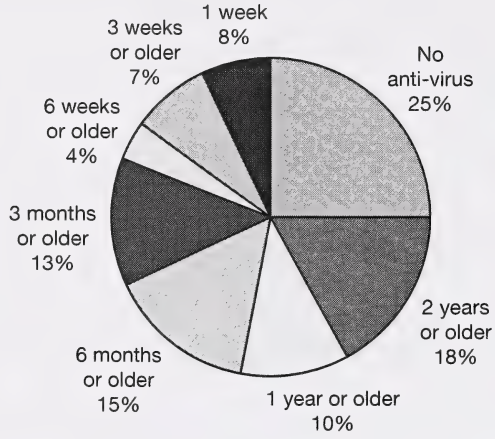
Turn to Section 2: Lesson 2 in the Module 5 Student Module Booklet.

2. Use the following article to answer these questions.

Home Computers Unprotected

The HJCG group conducted a telephone survey of 1000 Canadian computer users. These users were asked questions regarding their use of anti-virus software. The survey data is shown in the following graph.

Age of Anti-Virus Protection



When asked, a spokesperson for HJCG said, "Over 1500 random phone calls were made. The survey took place between May 15 and June 1. If the person answering the call didn't own a computer, the survey instrument wasn't administered." (They didn't ask this person the survey questions.) The spokesperson noted, "Over many six-week periods more than 100 new viruses are found. Older anti-virus software won't protect against these new viruses."

(2) **a.** How was the sample for the data selected? Why do you think the researchers used this method?

(2) **b.** How did the researchers collect the data for the survey?

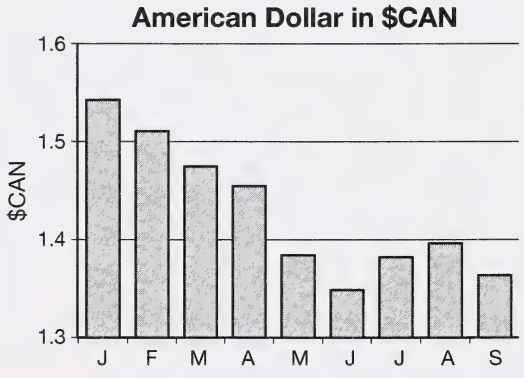
(3) **c.** What would you have done differently? Why?

(3) **d.** Does the graph present the data clearly and honestly? Explain your answer.

(3) **e.** What conclusions can be drawn from this survey?

3. Following is a table showing the average monthly value, in Canadian currency, of the American dollar from January 2003 to September 2003. This information is then shown in a bar graph.

Date	Monthly Average
January	1.5410
February	1.5124
March	1.4759
April	1.4585
May	1.3845
June	1.3523
July	1.3815
August	1.3957
September	1.3632



(5) **a.** Do you think the graph is an honest portrayal of the data? Explain your answer.

_____

_____

_____

_____

_____

_____

(2) **b.** Why do you think the graph was presented this way?

Turn to Section 2: Conclusion in the Module 5 Student Module Booklet.

(20)

Final Module Assignment

Clearly show how you arrived at your answers by showing your work.

Turn to page 305 in your textbook. Read through question 4 and then complete the following questions. If you do not attend a school, you could collect information from teens in your community.

(2) **1.** What is the population of your survey?

(4) **2.** Design a method to obtain a random sample from your population.

(3) **3.** Write a question, or a set of questions, that you could use to gather your data.

(4) **4.** Administer the survey and collect the data. Record your data here.

(4) **5.** Draw a graph using a spreadsheet to display your findings. Attach your graph in the space below.

(3) **6.** What is your conclusion?

_____

_____

_____

_____

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